



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:	)	Docket No.:	4121-136	
)				
Applicant:	Nuesch, et al.	)	Confirmation No.:	9054
)				
Application No.:	10/069,056	)	Examiner:	Not yet assigned
)				
Date Filed:	February 11, 2002	)	Group Art Unit:	Not yet assigned
)				
Title:	PARVOVIRUS NS 1 VARIANTS	)	Customer No.:	23448
)				
)				
)				



23448

PATENT TRADEMARK OFFICE

**FEDERAL EXPRESS CERTIFICATE**

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\_\_\_\_\_  
L. Stephen Lockett

February 28, 2003

\_\_\_\_\_  
Date of Mailing

7902 1787 8854

\_\_\_\_\_  
**Federal Express Label Number**

**STATEMENT OF IDENTITY UNDER 37 C.F.R. §1.821 (f)**

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Arlington, VA 22202

Sir:

I hereby state that I have prepared the paper copy of the document titled "Sequence Listing\_resubmit.ST25" and recorded such document on computer readable form on February 27, 2003, and that information recorded in computer readable form is identical to that on the paper copy of sequence listing submitted.

Respectfully submitted,



Marianne Fuerer  
Reg. No. 39,983  
Attorney for Applicants

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INTELLECTUAL PROPERTY/  
TECHNOLOGY LAW  
P.O. Box 14329  
Research Triangle Park, NC 27709  
Telephone: (919) 419-9350  
Fax: (919) 419-9354  
Attorney Ref: 4121-136

Sequence Listing\_resubmit.ST25  
SEQUENCE LISTING

<110> Nuesch, Jurg  
Rommelaere, Jean

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<120> Parvovirus NS 1 Variants

<130> 4121-136

<140> 10/069,056

<141> 2002-02-11

<150> PCT/EP00/07835

<151> 2000-08-11

<150> EP 99 115 161.4

<151> 1999-08-13

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<170> PatentIn version 3.2

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Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu  
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Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp  
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Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
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<213> Part of Parvovirus NS1 Variant

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Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu  
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Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp  
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Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys  
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Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val  
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Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys  
115 120 125

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp  
130 135 140

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala  
145 150 155 160

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
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Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
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Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
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Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
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Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
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Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
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Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
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Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
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Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
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Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
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Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
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Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu  
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Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp  
65 70 75 80

Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys  
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Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val  
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Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys  
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His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp  
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Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala  
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Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
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 195                           200                           205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
 210                           215                           220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
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Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
 245                           250                           255

Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys  
 260                           265                           270

Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu  
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Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
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Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
 305                           310                           315                           320

Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
 325                           330                           335

Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
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Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Ala Cys Arg Ile Phe Ala  
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Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
 370                           375                           380

Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro  
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Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
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Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn  
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Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe  
435 440 445

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Thr Ile  
450 455 460

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
500 505 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
610 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  
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<212> DNA

<213> Part of Parvovirus NS1 Variant

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<210> 12  
<211> 2019  
<212> DNA  
<213> Parvovirus NS1 Variant

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cgaggagcgg aaactacttg ggaccaaagc gaggacatgg aatggaaac cacagtggat 240  
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tgctataatg cagccatgt aaactttcca ttatgtact gtaccaacaa gaacttgatt 1320  
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aatggttacc aatctaccat ggcaagctac tgtgctaaat gggcaaaagt tcctgattgg	1680
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<210> 13

<211> 20

<212> PRT

<213> Part of Parvovirus NS1 Variant

<400> 13

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<210> 14

<211> 672

<212> PRT

<213> Parvovirus NS1 Variant

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Leu Lys Glu Lys Ser Asn Gln Glu Val Phe Ser Phe Val Phe Lys Asn			
20	25	30	

Glu Asn Val Gln Leu Asn Gly Lys Asp Ile Gly Trp Asn Ser Tyr Lys			
35	40	45	

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu			
50	55	60	

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp			
65	70	75	80

Sequence Listing\_resubmit.ST25

Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys  
85 90 95

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Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val  
100 105 110

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys  
115 120 125

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp  
130 135 140

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala  
145 150 155 160

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
165 170 175

Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
210 215 220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
225 230 235 240

Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
245 250 255

Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys  
260 265 270

Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu  
275 280 285

Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
290 295 300

Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
305 310 315 320

Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
325 330 335

Sequence Listing\_resubmit.ST25

Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
340 345 350

Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala  
355 360 365

Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
370 375 380

Leu Asn Arg Gln Gly Gly Lys Arg Asn Ala Val Leu Phe His Gly Pro  
385 390 395 400

Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
405 410 415

Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn  
420 425 430

Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe  
435 440 445

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Thr Ile  
450 455 460

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
500 505 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
Page 17

580

Sequence Listing\_resubmit.ST25  
585  
590

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Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
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Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
625 630 635 640

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Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp  
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<210> 15

<211> 60

<212> DNA

<213> Part of Parvovirus NS1 Variant

<400> 15

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<210> 16

<211> 2019

<212> DNA

<213> Parvovirus NS1 Variant

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gatatcgat ggaatagttt caaaaaagag ctgcaggagg acgagctgaa atctttacaa 180

cgaggagcgg aaactacttg ggaccaaagc gaggacatgg aatgggaaac cacagtggat 240

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ccaccaagag acggaggcta tttcttagc agtgaactctg gctggaaaac taactttta 720

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<210> 17

<211> 20

<212> PRT

<213> Part of Parvovirus NS1 Variant

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<210> 18

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<212> PRT

<213> Parvovirus NS1 Variant

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Glu Asn Val Gln Leu Asn Gly Lys Asp Ile Gly Trp Asn Ser Tyr Lys  
35 40 45

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu  
50 55 60

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp  
65 70 75 80

Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys  
85 90 95

Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val  
100 105 110

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys  
115 120 125

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp  
130 135 140

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala  
145 150 155 160

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
165 170 175

Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
210 215 220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
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Sequence Listing resubmit.ST25

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Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu  
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Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
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Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
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Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
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Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
340 345 350

Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala  
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Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
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Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro  
385 390 395 400

Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
405 410 415

Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn  
420 425 430

Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe  
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Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Ala Ile  
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Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
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Sequence Listing\_resubmit.ST25

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Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
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Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
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Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
610 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  
645 650 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp  
660 665 670

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re United States Patent Application of: E )

Applicant: Nuesch, et al. )

Application No.: 10/069,056 )

Date Filed: February 11, 2002 )

Title: PARVOVIRUS NS 1 VARIANTS )



Docket No.: 4121-136 )

Examiner: Not yet assigned. )

Group Art Unit: Not yet assigned. )



23448

PATENT & TRADEMARK OFFICE

**EXPRESS MAIL CERTIFICATE**

It hereby is certified by the person identified below that the attached documents are being mailed to the Commissioner of Patents on the date specified, in an envelope addressed to the Commissioner of Patents, Box PCT, Washington, D.C. 20231, and Express Mailed under the provisions of 37CFR 1.10.

Katrina Holland

Katrina Holland

June 20, 2002

Date of Mailing

EL544952114US

Express Mail Label Number

**STATEMENT OF IDENTITY UNDER 27 C.F.R. §1.821 (f)**

Commissioner for Patents  
Box PCT  
Washington, D.C. 20231

Sir:

I hereby state that I have prepared the paper copy of the document titled "SEQUENCE LISTING.st25.txt" and recorded such document on computer readable form on June 14, 2002, and that information recorded in computer readable form is identical to that on the paper copy of sequence listing submitted.

Respectfully submitted,

Marianne Fuierer

Marianne Fuierer  
Reg. No. 39,983  
Attorney for Applicants

INTELLECTUAL PROPERTY/  
TECHNOLOGY LAW  
P.O. Box 14329  
Research Triangle Park, NC 27709  
Telephone: (919) 419-9350  
Fax: (919) 419-9354  
Attorney Ref: 4121-136



## SEQUENCE LISTING

<110> Nuesch, Jurg  
Rommelaere, Jean

## 120. Parvovirus NS 1 variants

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<140> 10/069,056  
<141> 2002-02-11

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313 500

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&lt;400&gt; 2

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Leu Lys Glu Lys Ser Asn Gln Glu Val Phe Ser Phe Val Phe Lys Asn			
20	25	30	

Glu Asn Val Gln Leu Asn Gly Lys Asp Ile Gly Trp Asn Ser Tyr Lys			
35	40	45	

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu			
50	55	60	

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp			
65	70	75	80

Glu Met Thr Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys			
85	90	95	

Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val			
100	105	110	

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys			
115	120	125	

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp			
130	135	140	

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala  
 145 150 155 160

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
 165 170 175

Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
 180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
 195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
 210 215 220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
 225 230 235 240

Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
 245 250 255

Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys  
 260 265 270

Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu  
 275 280 285

Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
 290 295 300

Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
 305 310 315 320

Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
 325 330 335

Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
 340 345 350

Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala  
 355 360 365

Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
 370 375 380

Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro  
 385 390 395 400

Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
 405 410 415

Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn  
 420 425 430

~~Asp Cys Thr Asn Lys Asn Ile Thr Trp Val Glu Glu Ala Gly Asn Phe~~  
 435 440 445

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Thr Ile  
 450 455 460

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
 465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
 485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
 500 505 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
 515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
 530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
 545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
 565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
 580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
 595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
 610 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
 625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  
 645 650 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp  
 660 665 670

<210> 3  
 <211> 60

<212> DNA

<213> Part of Parvovirus NS1 Variant

<400> 3  
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<210> 4  
<211> 2019  
<212> DNA  
<213> Parvovirus NS1 Variant

<400> 4  
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gatatcgat ggaatagttt caaaaaagag ctgcaggagg acgagctgaa atctttacaa 180  
cgaggagcgg aaactacttg ggaccaaagc gaggacatgg aatgggaaac cacagtggat 240  
gaaatgacca aaaagcaagt attcattttt gattcttgg ttaaaaaatg tttatttggaa 300  
gtgcttaaca caaagaatat atttccttgtt gatgttaatt ggttggca acatgaatgg 360  
ggaaaagacc aaggctggca ctgccatgta ctaattggag gaaaggactt tagtcaagct 420  
caaggaaat ggtggagaag gcaactaaat gtttactgga gcagatggtt ggtaacagcc 480  
tgtaatgtgc aactaacacc agctgaaaga attaaactaa gagaaatagc agaagacaat 540  
gagtgggttta ctctacttac ttataagcat aagcaaacca aaaaagacta taccaagtgt 600  
gttctttttt gaaacatgat tgcttactat ttttaacta aaaagaaaat aagcactagt 660  
ccaccaagag acggaggctt ttttcttagc agtactctg gctggaaaac taactttta 720  
aaagaaggcg agcgccatct agtgagcaaa ctatacactg atgacatgctg gccagaaacg 780  
gttgaaccca cagtaaccac tgccgaggaa actaagcgcg gcagaattca aactaaaaaa 840  
gaagttgcta ttaaaactac acttaaagag ctggtgata aaagagtaac ctcaccagag 900  
gactggatga tgatgcagcc agacagttac attgaaatga tggctcaacc aggtggagaa 960  
aacctgctga aaaatacgct agagattgt acactaactc tagccagaac caaaacagca 1020  
tttgacttaa ttttagaaaaa agctgaaacc agcaaactaa ccaactttt actgcctgac 1080  
acaagaacct gcagaatttt tgctttcat ggctggaaact atgttaaagt ttgccatgct 1140  
atttgctgtg ttttaacag acaaggaggc aaaagaaata ctgtttatt tcatggacca 1200  
gccagcacag gcaaacttat tattgcacaa gccatagcac aagcagttgg caatgttggt 1260  
tgctataatg cagccaatgt aaactttcca ttaatgact gtaccaacaa gaacttgatt 1320  
tggtagaaag aagctggtaa cttggacag caagtaaacc agttaaagc catttgctct 1380  
ggtaaacta ttgcattga tcaaaaagga aaaggcagca aacagattga accaacacca 1440  
gtcatcatga ccacaaatga gaacattaca gtggtcagaa taggctgcga agaaagacca 1500  
gaacacactc aaccaatcag agacagaatg cttAACATTc atctaacaaca taccttgct 1560  
ggtgactttt gtttgggtga caaaaatgaa tggcccatga tttgtgctt gttggtaaag 1620  
aatggttacc aatctaccat ggcaagctac tggctaaat ggggcaaagt tcctgattgg 1680  
tcagaaaaact gggcggagcc aaaggtgccaa actcctataa atttacttagg ttccggcacgc 1740

tcaccattca cgacaccgaa aagtacgcct ctcagccaga actatgcact aactccactt 1800  
 gcatcggtac tcgaggacct ggcttagag ccttgagca caccaaatac tcctgttgcg 1860  
 ggcactgcag aaacccagaa cactggggaa gctggttcca aagcctgcca agatggtcaa 1920  
 ctgagcccaa cttggtcaga gatcaggag gatttgagag cgtgcttcgg tgccgaaccg 1980  
 ttgaagaaag acttcagcga gccgctgaac ttggactaa 2019

<210> 5  
 <211> 20  
 <212> PRT  
 <213> Part of Parvovirus NS1 Variant

<400> 5

Glu Val Ala Ile Lys Thr Thr Leu Lys Glu Leu Val His Lys Arg Val  
 1 5 10 15

Thr Ser Pro Glu  
 20

<210> 6  
 <211> 672  
 <212> PRT  
 <213> Parvovirus NS1 Variant

<400> 6

Met Ala Gly Asn Ala Tyr Ser Asp Glu Val Leu Gly Ala Thr Asn Trp  
 1 5 10 15

Leu Lys Glu Lys Ser Asn Gln Glu Val Phe Ser Phe Val Phe Lys Asn  
 20 25 30

Glu Asn Val Gln Leu Asn Gly Lys Asp Ile Gly Trp Asn Ser Tyr Lys  
 35 40 45

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu  
 50 55 60

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp  
 65 70 75 80

Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys  
 85 90 95

Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val  
 100 105 110

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys  
 115 120 125

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp  
 130 135 140

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala  
 145 150 155 160

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
 165 170 175

Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
 180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
 195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
 210 215 220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
 225 230 235 240

Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
 245 250 255

Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys  
 260 265 270

Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ala Ile Lys Thr Thr Leu  
 275 280 285

Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
 290 295 300

Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
 305 310 315 320

Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
 325 330 335

Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
 340 345 350

Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala  
 355 360 365

Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
 370 375 380

Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro  
 385 390 395 400

Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
 405 410 415

Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn

420

425

430

Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe  
 435 440 445

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Thr Ile  
 450 455 460

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
 465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
 485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
 500 505 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
 515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
 530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
 545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
 565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
 580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
 595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
 610 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
 625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  
 645 650 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp  
 660 665 670

<210> 7  
 <211> 60

<212> DNA

<213> Part of Parvovirus NS1 Variant

<400> 7

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<210> 8  
<211> 2019

<212> DNA  
<213> Parvovirus NS1 Variant

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gatatcgat ggaatagttt caaaaaagag ctgcaggagg acgagctgaa atctttacaa	180
cgaggagcgg aaactacttg ggaccaaagc gaggacatgg aatggggaaac cacagtggat	240
gaaatgacca aaaagcaagt attcattttt gattcttgg ttaaaaaatg tttatggaa	300
gtgcttaaca caaagaatat atttccctggt gatgttaatt ggtttgcata acatgaatgg	360
ggaaaagacc aaggctggca ctgccccatgtt ctaattggag gaaaggactt tagtcaagct	420
caagggaaat ggtggagaag gcaactaaat gtttactgga gcagatggtt ggtaacagcc	480
tgttatgtgc aactaacacc agctgaaaga attaaactaa gagaaatagc agaagacaat	540
gagtgggtta ctctacttac ttataagcat aagcaacca aaaaagacta taccaagtgt	600
gttctttttt gaaacatgtat tgcttactat tttttacta aaaaagaaaat aagcactagt	660
ccaccaagag acggaggcta ttttcttagc agtgcactctg gctggaaaac taactttttt	720
aaagaaggcg agcgccatct agtgagcaaa ctatacactg atgacatgcg gccagaaacg	780
gttgaaccca cagtaaccac tgcgccaggaa actaagcgcg gcagaattca aactaaaaaa	840
gaagtttcta ttAAAactac acttAAAGAG ctgggtgcata aaagagtaac ctcaccagag	900
gactggatga tgatgcagcc agacagttac attgaaatga tggctcaacc aggtggagaa	960
aacctgctga aaaatacgct agagattgt acactaactc tagccagaac caaaacagca	1020
tttgacttaa tttagaaaaa agctgaaacc agcaaaactaa ccaactttt actgcctgac	1080
acaagagcct gcagaatttt tgctttcat ggctgaaact atgttaaagt ttgccatgct	1140
atttgctgtg ttAAAacag acaaggaggc aaaagaaaata ctgttttatt tcatggacca	1200
gccagcacag gcaaatttat tattgcacaa gccatagcac aagcagttgg caatgttgt	1260
tgctataatg cagccaatgt aaactttcca ttAAATGACT gtaccaacaa gaacttgatt	1320
tgggtagaag aagctggtaa ctggacag caagtaaacc agtttAAAGC catttgctct	1380
ggtaaacta ttgcattga tcAAAAAGGA aaaggcagca aacagattga accAACACCA	1440
gtcatcatga ccacaaatga gaacattaca gtggtcagaa taggctgcga agaaagacca	1500
gaacacactc aaccaatcg agacagaatg cttaacattc atctaacaca tacctgcct	1560
ggtgactttg gtttgggtga caaaaatgaa tggccatga tttgtgttg gttggtaaag	1620
aatggttacc aatctaccat ggcaagctac tgtgctaaat ggggcaaagt tcctgattgg	1680
tcagaaaact gggcggagcc aaaggtGCCA actcctataa atttactagg ttcggcacgc	1740
tcaccattca cgacaccgaa aagtacgcct ctcagccaga actatgcact aactccactt	1800

gcatcgatc tcgaggacct ggcttagag ccttggagca caccaaatac tcctgttgcg	1860
ggcactgcag aaacccagaa cactgggaa gctggttcca aagcctgcc a agatggtcaa	1920
cttagccaa cttggtcaga gatcgaggag gatttgagag cgtgcttcgg tgccgaaccg	1980
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<210> 9  
<211> 20  
<212> PRT  
<213> Part of Parvovirus NS1 Variant  
<400> 9

Thr Arg Ala Cys Arg Ile Phe Ala Phe His Gly Trp Asn Tyr Val Lys			
1	5	10	15

Val Cys His Ala	
20	

<210> 10  
<211> 672  
<212> PRT  
<213> Parvovirus NS1 Variant  
<400> 10

Met Ala Gly Asn Ala Tyr Ser Asp Glu Val Leu Gly Ala Thr Asn Trp			
1	5	10	15

Leu Lys Glu Lys Ser Asn Gln Glu Val Phe Ser Phe Val Phe Lys Asn			
20	25	30	

Glu Asn Val Gln Leu Asn Gly Lys Asp Ile Gly Trp Asn Ser Tyr Lys			
35	40	45	

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu			
50	55	60	

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp			
65	70	75	80

Glu Met Thr Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys			
85	90	95	

Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val			
100	105	110	

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys			
115	120	125	

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp			
130	135	140	

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala			
145	150	155	160

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
165 170 175

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Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
210 215 220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
225 230 235 240

Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
245 250 255

Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys  
260 265 270

Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu  
275 280 285

Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
290 295 300

Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
305 310 315 320

Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
325 330 335

Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
340 345 350

Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Ala Cys Arg Ile Phe Ala  
355 360 365

Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
370 375 380

Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro  
385 390 395 400

Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
405 410 415

Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn  
420 425 430

Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe  
 435 440 445

~~Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Thr Ile~~  
 450 455 460

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
 465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
 485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
 500 505 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
 515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
 530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
 545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
 565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
 580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
 595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
 610 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
 625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  
 645 650 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp  
 660 665 670

<210> 11

<211> 60

<212> DNA

<213> Part of Parvovirus NS1 Variant

<400> 11

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<210> 12  
 <211> 2019  
 <212> DNA  
 <213> Parvovirus NS1 Variant

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gatatcgat ggaatagtttta caaaaaagag ctgcaggagg acgagctgaa atctttacaa	180
cgaggagcgg aaactacttg ggaccaaagc gaggacatgg aatgggaaac cacagtggat	240
gaaatgacca aaaagcaagt attcattttt gattcttgg ttaaaaaatg tttatggaa	300
gtgcttaaca caaagaatat atttccttgtt gatgttaatt gttttgtgca acatgaatgg	360
gaaaaagacc aaggctggca ctgccccatgttta ctaattggag gaaaggactt tagtcaagct	420
caagggaaat ggtggagaag gcaactaaat gtttactgaa gcagatggtt ggtaacagcc	480
tgttatgtgc aactaacacc agctgaaaga attaaactaa gagaaatagc agaagacaat	540
gagtgggtta ctctacttac ttataagcat aagcaaacca aaaaagacta taccaagtgt	600
tttctttttt gaaacatgtat tgcttactat tttttacta aaaagaaaat aagcactagt	660
ccaccaagag acggaggcta ttttcttagc agtgcacttgc gctggaaaac taactttta	720
aaagaaggcg agcgccatct agtgagcaaa ctatacactg atgacatgctg gccagaaacg	780
gttggaaacca cagtaaccac tgccaggaa actaagcgcg gcagaattca aactaaaaaa	840
gaagtttcta ttAAAactac acttAAAGAG ctgggtgcata aaagagtaac ctcaccagag	900
gactggatga tcatgtcagcc agacagttac attgaaatga tggctcaacc aggtggagaa	960
aacctgctga aaaatacgct agagatttg acactaactc tagccagaac caaaacagca	1020
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acaagaacct gcagaatttt tgctttcat ggctggaaact atgttaaagt ttggcatgct	1140
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gccagcacag gcaaaatctat tattgcacaa gccatagcac aagcagttgg caatgttgg	1260
tgctataatg cagccaatgt aaactttcca ttAAATGACT gtaccaacaa gaacttgatt	1320
tgggtagaag aagctggtaa cttggacag caagtaaacc agttaaagc catttgctct	1380
ggtaaacta ttgcattga tcaaaaagga aaaggcagca aacagattga accaacacca	1440
gtcatcatga ccacaaatga gaacattaca gtggcagaa taggctgcga agaaagacca	1500
gaacacactc aaccaatcg agacagaatg cttAACATTc atctaacaca taccttgcct	1560
ggtgactttt gtttgggtga caaaaatgaa tggccatga tttgtgctt gttggtaaag	1620
aatggttacc aatctaccat ggcaagctac tgtgttaaat ggggcaaaatg tcctgattgg	1680
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gcattcgatc tcgaggacct ggcttttagag cttggagca caccaatac tcctgttgcg	1860

ggcactgcag aaacccagaa cactgggaa gctggttcca aagcctgccaa agatggtcaa	1920
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ttgaagaaaag acttcagcga gccgctgaac ttggactaa	2019

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<210> 13  
<211> 20  
<212> PRT  
<213> Part of Parvovirus NS1 Variant  
<400> 13

Ile Cys Cys Val Leu Asn Arg Gln Gly Gly Lys Arg Asn Ala Val Leu	
1	5
10	15

Phe His Gly Pro	
20	

<210> 14  
<211> 672  
<212> PRT  
<213> Parvovirus NS1 Variant  
<400> 14

Met Ala Gly Asn Ala Tyr Ser Asp Glu Val Leu Gly Ala Thr Asn Trp	
1	5
10	15

Leu Lys Glu Lys Ser Asn Gln Glu Val Phe Ser Phe Val Phe Lys Asn	
20	25
30	

Glu Asn Val Gln Leu Asn Gly Lys Asp Ile Gly Trp Asn Ser Tyr Lys	
35	40
45	

Lys Glu Leu Gln Glu Asp Glu Leu Lys Ser Leu Gln Arg Gly Ala Glu	
50	55
60	

Thr Thr Trp Asp Gln Ser Glu Asp Met Glu Trp Glu Thr Thr Val Asp	
65	70
75	80

Glu Met Thr Lys Lys Gln Val Phe Ile Phe Asp Ser Leu Val Lys Lys	
85	90
95	

Cys Leu Phe Glu Val Leu Asn Thr Lys Asn Ile Phe Pro Gly Asp Val	
100	105
110	

Asn Trp Phe Val Gln His Glu Trp Gly Lys Asp Gln Gly Trp His Cys	
115	120
125	

His Val Leu Ile Gly Gly Lys Asp Phe Ser Gln Ala Gln Gly Lys Trp	
130	135
140	

Trp Arg Arg Gln Leu Asn Val Tyr Trp Ser Arg Trp Leu Val Thr Ala	
145	150
155	160

Sequence Listing.ST25.txt

Cys Asn Val Gln Leu Thr Pro Ala Glu Arg Ile Lys Leu Arg Glu Ile  
165 170 175

Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
210 215 220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
225 230 235 240

Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
245 250 255

Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys  
260 265 270

Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu  
275 280 285

Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
290 295 300

Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
305 310 315 320

Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
325 330 335

Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
340 345 350

Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala  
355 360 365

Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
370 375 380

Leu Asn Arg Gln Gly Gly Lys Arg Asn Ala Val Leu Phe His Gly Pro  
385 390 395 400

Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
405 410 415

Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn  
420 425 430

Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe

435

440

445

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Thr Ile  
 450 455 460

Arg Ile Asp Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro  
 465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
 485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
 500 505 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
 515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
 530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
 545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
 565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
 580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
 595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
 610 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
 625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  
 645 650 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp  
 660 665 670

&lt;210&gt; 15

&lt;211&gt; 60

&lt;212&gt; DNA

&lt;213&gt; Part of Parvovirus NS1 Variant

&lt;400&gt; 15

ggtaagctatccgcattgtatcaaaaaggaaaacaggcagcaaacagattgaccaccca 60

&lt;210&gt; 16

<211> 2019  
<212> DNA  
<213> Parvovirus NS1 Variant

<400> 16

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agtaaccagg aagtgttctc atttgtttt aaaaatgaaa atgttcaact gaatggaaaa		120
gatatcgat ggaatagttt caaaaaagag ctgcaggagg acgagctgaa atctttacaa		180
cgaggagcgg aaactacttg ggaccaaagc gaggacatgg aatgggaaac cacagtggat		240
gaaatgacca aaaagcaagt attcattttt gattcttgg ttaaaaaatg tttatggaa		300
gtgcttaaca caaagaatat atttccttgtt gatgttattt ggtttgtgca acatgaatgg		360
ggaaaagacc aaggctggca ctgccatgta ctaattggag gaaaggactt tagtcaagct		420
caagggaaat ggtggagaag gcaactaaat gtttactgga gcagatggtt ggtaacagcc		480
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gagtgggtta ctctacttac ttataagcat aagcaaacca aaaaagacta tbeccaagtgt		600
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gccagcacag gcaaatttat tattgcacaa gccatagcac aagcagttgg caatgttgg		1260
tgctataatg cagccatgt aaactttcca ttaatgact gtaccaacaa gaacttgatt		1320
tgggtagaag aagctggtaa cttggacag caagtaaacc agtttaaagc catttgctct		1380
ggtaagcta ttgcattga tcaaaaagga aaaggcagca aacagattga accaacacca		1440
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gcatcgatc tcgaggacct ggcttttagag cttggagca caccaatac tcctgttgcg		1860
ggcactgcag aaacccagaa cactggggaa gctggttcca aagcctgcca agatggtaaa		1920

ctgagcccaa cttggcaga gatcgaggag gatttgagag cgtgcttcgg tgccgaaccg 1980  
 ttgaagaaag acttcagcga gccgctgaac ttggactaa 2019

&lt;210&gt; 17

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Part of Parvovirus NS1 Variant

&lt;400&gt; 17

Gly	Gln	Ala	Ile	Arg	Ile	Asp	Gln	Lys	Gly	Lys	Gly	Ser	Lys	Gln	Ile
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Glu	Pro	Thr	Pro
	20		

&lt;210&gt; 18

&lt;211&gt; 672

&lt;212&gt; PRT

&lt;213&gt; Parvovirus NS1 Variant

&lt;400&gt; 18

Met	Ala	Gly	Asn	Ala	Tyr	Ser	Asp	Glu	Val	Leu	Gly	Ala	Thr	Asn	Trp
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Leu	Lys	Glu	Lys	Ser	Asn	Gln	Glu	Val	Phe	Ser	Phe	Val	Phe	Lys	Asn
	20						25						30		

Glu	Asn	Val	Gln	Leu	Asn	Gly	Lys	Asp	Ile	Gly	Trp	Asn	Ser	Tyr	Lys
		35				40					45				

Lys	Glu	Leu	Gln	Glu	Asp	Glu	Leu	Lys	Ser	Leu	Gln	Arg	Gly	Ala	Glu
	50					55				60					

Thr	Thr	Trp	Asp	Gln	Ser	Glu	Asp	Met	Glu	Trp	Glu	Thr	Thr	Val	Asp
65				70				75				80			

Glu	Met	Thr	Lys	Lys	Gln	Val	Phe	Ile	Phe	Asp	Ser	Leu	Val	Lys	Lys
			85				90						95		

Cys	Leu	Phe	Glu	Val	Leu	Asn	Thr	Lys	Asn	Ile	Phe	Pro	Gly	Asp	Val
			100				105					110			

Asn	Trp	Phe	Val	Gln	His	Glu	Trp	Gly	Lys	Asp	Gln	Gly	Trp	His	Cys
		115				120					125				

His	Val	Leu	Ile	Gly	Gly	Lys	Asp	Phe	Ser	Gln	Ala	Gln	Gly	Lys	Trp
	130			135						140					

Trp	Arg	Arg	Gln	Leu	Asn	Val	Tyr	Trp	Ser	Arg	Trp	Leu	Val	Thr	Ala
145				150				155			160				

Cys	Asn	Val	Gln	Leu	Thr	Pro	Ala	Glu	Arg	Ile	Lys	Leu	Arg	Glu	Ile
			165				170					175			

Ala Glu Asp Asn Glu Trp Val Thr Leu Leu Thr Tyr Lys His Lys Gln  
 180 185 190

Thr Lys Lys Asp Tyr Thr Lys Cys Val Leu Phe Gly Asn Met Ile Ala  
 195 200 205

Tyr Tyr Phe Leu Thr Lys Lys Ile Ser Thr Ser Pro Pro Arg Asp  
 210 215 220

Gly Gly Tyr Phe Leu Ser Ser Asp Ser Gly Trp Lys Thr Asn Phe Leu  
 225 230 235 240

Lys Glu Gly Glu Arg His Leu Val Ser Lys Leu Tyr Thr Asp Asp Met  
 245 250 255

Arg Pro Glu Thr Val Glu Thr Thr Val Thr Thr Ala Gln Glu Thr Lys  
 260 265 270

Arg Gly Arg Ile Gln Thr Lys Lys Glu Val Ser Ile Lys Thr Thr Leu  
 275 280 285

Lys Glu Leu Val His Lys Arg Val Thr Ser Pro Glu Asp Trp Met Met  
 290 295 300

Met Gln Pro Asp Ser Tyr Ile Glu Met Met Ala Gln Pro Gly Gly Glu  
 305 310 315 320

Asn Leu Leu Lys Asn Thr Leu Glu Ile Cys Thr Leu Thr Leu Ala Arg  
 325 330 335

Thr Lys Thr Ala Phe Asp Leu Ile Leu Glu Lys Ala Glu Thr Ser Lys  
 340 345 350

Leu Thr Asn Phe Ser Leu Pro Asp Thr Arg Thr Cys Arg Ile Phe Ala  
 355 360 365

Phe His Gly Trp Asn Tyr Val Lys Val Cys His Ala Ile Cys Cys Val  
 370 375 380

Leu Asn Arg Gln Gly Gly Lys Arg Asn Thr Val Leu Phe His Gly Pro  
 385 390 395 400

Ala Ser Thr Gly Lys Ser Ile Ile Ala Gln Ala Ile Ala Gln Ala Val  
 405 410 415

Gly Asn Val Gly Cys Tyr Asn Ala Ala Asn Val Asn Phe Pro Phe Asn  
 420 425 430

Asp Cys Thr Asn Lys Asn Leu Ile Trp Val Glu Glu Ala Gly Asn Phe  
 435 440 445

Gly Gln Gln Val Asn Gln Phe Lys Ala Ile Cys Ser Gly Gln Ala Ile  
450 455 460

~~Aro Ile Asn Gln Lys Gly Lys Gly Ser Lys Gln Ile Glu Pro Thr Pro~~  
465 470 475 480

Val Ile Met Thr Thr Asn Glu Asn Ile Thr Val Val Arg Ile Gly Cys  
485 490 495

Glu Glu Arg Pro Glu His Thr Gln Pro Ile Arg Asp Arg Met Leu Asn  
500 505 510

Ile His Leu Thr His His Leu Pro Gly Asp Phe Gly Leu Val Asp Lys  
515 520 525

Asn Glu Trp Pro Met Ile Cys Ala Trp Leu Val Lys Asn Gly Tyr Gln  
530 535 540

Ser Thr Met Ala Ser Tyr Cys Ala Lys Trp Gly Lys Val Pro Asp Trp  
545 550 555 560

Ser Glu Asn Trp Ala Glu Pro Lys Val Pro Thr Pro Ile Asn Leu Leu  
565 570 575

Gly Ser Ala Arg Ser Pro Phe Thr Thr Pro Lys Ser Thr Pro Leu Ser  
580 585 590

Gln Asn Tyr Ala Leu Thr Pro Leu Ala Ser Asp Leu Glu Asp Leu Ala  
595 600 605

Leu Glu Pro Trp Ser Thr Pro Asn Thr Pro Val Ala Gly Thr Ala Glu  
610 615 620

Thr Gln Asn Thr Gly Glu Ala Gly Ser Lys Ala Cys Gln Asp Gly Gln  
625 630 635 640

Leu Ser Pro Thr Trp Ser Glu Ile Glu Glu Asp Leu Arg Ala Cys Phe  
645 650 655

Gly Ala Glu Pro Leu Lys Lys Asp Phe Ser Glu Pro Leu Asn Leu Asp  
660 665 670

This confirms r c ipt of:

Statement of Identity Under 27 C.F.R. §1.821 (f)

In re U.S. Patent Appl. of: Nuesch, et al.  
Serial No.: 10/069,056  
Filing Date: February 11, 2002  
Title: PARVOVIRUS NS 1 VARIANTS  
Date Mailed: June 20, 2002  
Express Mail Label: EL544952114US  
Attorney Ref: 4121-136

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